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CHRONICLE OF THE WORLD HEALTH ORGANIZATION

INFLUENZA VACCINES
MEDICAL EDUCATION IN SOUTH-EAST ASIA
NURSING EDUCATION IN TAIWAN
USA NATIONAL CITIZENS COMMITTEE FOR WHO

REPORTS OF EXPERT GROUPS
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WORLD HEALTH ORGANIZATION
PALAIS DES NATIONS
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The World Health Organization (WHO) is a specialized agency of the United Nations and represents the culmination of efforts to establish a single intergovernmental health agency. As such, it inherits the functions of antecedent organizations such as the Office International d'Hygiène Publique, the Health Organization of the League of Nations, and the Health Division of UNRRA.

WHO had its origin in the proposal made at the United Nations Conference held in San Francisco in 1945 that a specialized agency be created to deal with all matters relating to health. In 1946, representatives of 61 governments met at the International Health Conference, New York, drafted and signed the WHO Constitution, and established an Interim Commission to serve until the Constitution could be ratified by 26 Member States of the United Nations. The Constitution came into force on 7 April 1948, the First World Health Assembly met in Geneva in June 1948, and on 1 September 1948 the permanent Organization was established.

The work of the Organization is carried out by three organs : the World Health Assembly, the supreme authority, to which all Member States send delegates ; the Executive Board, the executive organ of the Health Assembly, consisting of 18 persons designated by as many Member States ; and a Secretariat under the Director-General.

The scope of WHO's interests and activities exceeds that of any previous international health organization and includes, in addition to major projects relating to malaria, tuberculosis, venereal diseases and treponematoses, maternal and child health, nutrition, and environmental sanitation, special programmes on public-health administration, epidemic diseases, mental health, professional and technical training, and other public-health subjects. It is also continuing work begun by earlier organizations on biological standardization, unification of pharmacopoeias, addiction-producing drugs, health statistics, international sanitary regulations, and the collection and dissemination of technical information, including epidemiological statistics.

* * *

The *Chronicle of the World Health Organization* is published in English, French, Spanish, and Chinese editions. It contains general information on the Organization, its principal activities, the meetings of its expert committees and other advisory bodies, as well as summaries of its main technical publications. Material from the *Chronicle* may be reproduced in the professional press, providing due acknowledgement is made.

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SCHEDULE OF MEETINGS

1-6 October	**Conference on African Onchocerciasis, Léopoldville**
4-6 October	**PASO : Executive Committee, twenty-third meeting, Santiago**
7-22 October	**Regional Committee for the Americas, sixth session, Santiago**
	PASO : Fourteenth Pan American Sanitary Conference, Santiago
11-16 October	**Expert Committee on Drugs Liable to Produce Addiction, fifth session, Geneva**
17-30 October	**Public Health Nurses Seminar, Istanbul**
18-23 October	**Expert Committee on Biological Standardization, eighth session, Geneva**
20 October-1 November	**Inter-regional Meeting for the Co-ordination of Research on Sylvatic Plague, to be attended by Governments of Iran, Iraq, Syria, and Turkey, Teheran**
22 October	**PASO : Executive Committee, twenty-fourth meeting, Santiago**
25 October-10 November	**Committee on International Quarantine, second session, Geneva**
26 October-2 November	**Joint FAO/WHO Expert Committee on Nutrition, fourth session, Geneva**
1-6 November	**Expert Committee on Mental Health, fourth session, Geneva**
15-27 November	**Malaria Conference for the Western Pacific and South-East Asia Regions, Taipeh**

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INFLUENZA VACCINES

In Europe there are only a few countries with laboratories which produce influenza vaccines, so that other countries needing vaccine must import it. No national health authority has yet adopted minimum requirements for the composition, potency, or safety of such vaccines. While some producing laboratories consult the national WHO influenza centre regarding the selection of strains for incorporation in the vaccines, others do not; the result is that many commercially available vaccines contain different strains of virus, including some which have not been detected in epidemics for several years and which are known to give no protection against current viruses. Laboratory tests on certain commercially available vaccines have also suggested that not all of them are likely to give reasonable protection.

In view of this situation, and of the fact that many of the vaccines produced are for exportation, WHO arranged for an international consultation on the composition and methods of testing of influenza vaccines. It was felt that the stage had not yet been reached at which recommendations of worldwide validity could be made, but that interim recommendations could be made for Europe. Accordingly, an informal meeting of a group of European influenza experts [1] was arranged at the World Influenza Centre in London. An invitation was extended to the WHO Regional Office for the Americas to arrange for an expert from the Americas to attend also; but this, unfortunately, proved not to be possible.

[1] The meeting was attended by : Dr. C. H. Andrewes (United Kingdom), Dr. I. Archetti (Italy), Dr. A. Isaacs (United Kingdom), Dr. P. von Magnus (Denmark), Professor J. Mulder (Netherlands), Brigadier A. E. Richmond (United Kingdom), Professor C. H. Stuart-Harris (United Kingdom), and Dr. A. M.-M. Payne (WHO). Also present was Sir Macfarlane Burnet, of Australia, who was in London at the time and was invited to join the group.

The recommendations which follow resulted from this meeting.

CRITERIA FOR SELECTION OF STRAINS

Influenza A

A vaccine should contain two recent strains of A virus, representing antigenic variants which have been responsible for significant epidemics during recent years. When a new antigenic variant appears which has been responsible for a significant epidemic and thus has shown its ability to spread through a partially immune population, a strain of this variant should be selected to replace the earlier of the two strains in current use. (This will help commercial firms, who would have to discard only half their original stock provided this is stored in bulk.)

The inclusion of PR8 or other early strains is not recommended since field trials have shown this strain to be devoid of protective power against current A viruses.

Influenza B

It is recommended that the vaccine should contain the Lee strain of influenza B virus, and a recently isolated strain which has been responsible for a significant epidemic.

Polyvalent vaccines

Experience has shown that vaccines containing both viruses A and B have been effective in the field. However, in view of the varying importance of influenza B in different countries, a decision to include B virus along with the A viruses must be left to the authorities concerned.

In addition to its antigenic characters, the strain of virus to be selected should have certain properties. It should be a potent antigen, preferably tested by antigenic potency tests in man or by comparable laboratory tests (see below). There is good evidence that adaptation to mice increases the antigenicity for mice, and some evidence to suggest that the same holds for trials in human beings. It may therefore be desirable that the strain should be adapted to mice if a satisfactory titre in eggs can be attained after adaptation. It should be able to produce a high titre on growth in the allantoic cavity of fertile hen eggs, even after adaptation to mice. Finally, there should be no tendency to undue deterioration on prolonged storage at 2°C.

STRAINS RECOMMENDED FOR CURRENT PRODUCTION

The following strains are recommended for current production of influenza vaccines :

(1) a 1951 " Liverpool " strain such as A/England-1/51 mouse-adapted;

(2) a more recent A strain such as A/Missouri-303/52 (Scandinavian) mouse-adapted;

(3) B Lee;

(4) a recent B strain such as B/Denmark-2/53 mouse-adapted.

PROCEDURE FOR FUTURE REVIEW OF RECOMMENDED STRAINS

The above recommendations are to remain unchanged until a new variant appears which is thought to be suitable for replacing one of the earlier strains. The new strain will be studied by the World Influenza Centre in consultation with interested workers. The World Influenza Centre will further consult with WHO influenza centres undertaking antigenic analysis and will report to the Organization.

TESTING OF VACCINES

Tests on a number of commercially available vaccines have shown that some of them lack significant antigenicity. It is clearly most important that adequate potency should be ensured; but, unfortunately, at the present time current laboratory potency tests have not proved satisfactory. Pending the development of satisfactory tests, a number of interim recommendations are made.

It is recommended provisionally that, once a strain has been shown to be a good antigen by potency tests in human beings or experimental animals, then the haemagglutination titres of vaccines prepared from this strain may be taken as an index of their antigenicity. The haemagglutination test should be carried out at a stage as near the final product as possible. In view of possible modifications imposed by passage, it is desirable to avoid repeated passages as far as possible by preparing large batches of seed virus.

Since different laboratories titrate haemagglutinins by different methods, it is proposed to supply reference preparations for each of the four recommended strains for reference in haemagglutinin titrations.[2] The reference preparations will be adjusted to a titre which should be readily attained in practice. The haemagglutinin titre of the harvested allantoic fluids used for vaccine preparation should be at least half that of the reference supplied.

In order to reduce the risk of febrile reactions, it is undesirable that the viruses should be unduly concentrated in the vaccine. With some preparations, more than threefold concentration of allantoic fluid has been found to be undesirable unless the vaccine is

[2] The four strains of virus and the appropriate reference preparations are now available and may be obtained from the World Influenza Centre, National Institute for Medical Research, The Ridgeway, Mill Hill, London, N.W. 7.

adsorbed on aluminium phosphate or similar adsorbant.

Laboratory tests of antigenicity in mice are under development, but no individual test can be recommended at the present time. It is hoped eventually to relate the results of such tests to antigenicity in man.

Tests of the antigenicity of vaccines in human beings are most desirable but present a number of obvious practical difficulties. Wherever possible, it should be shown that a reasonable anti-haemagglutinin response in man is obtained.

TERMINOLOGY FOR DESIGNATION OF STRAINS

Further to the recommendations of the first report of the WHO Expert Committee on Influenza,[3] it is considered that among recent A strains there has been sufficient antigenic divergence from strains similar to FM1 to justify the creation of a new group. It is recommended that WHO consult members of the Expert Advisory Panel on Influenza as to whether they are in agreement with this view and, if so, on the selection of a prototype strain. The 1951 Liverpool strains are considered to fall within the FM1 (1947) group. It is recommended that the term " A prime " should be discontinued.

In epidemiological reports, it is recommended that the results of serological tests should be recorded as indicating infection with virus A or B only, without further qualification.

FURTHER RESEARCH

Research on the incidence and significance of influenza in tropical regions is needed, since this may shed further light on the epidemiology of the disease, in particular on the relationship between epidemics in the Northern and Southern hemispheres.

Another suggested line of study is the possibility, through recently discovered recombination techniques, of producing strains of influenza virus having some combination of the desirable qualities for use in vaccines.

Further research is required on the correlation of the results of different tests of antigenic potency in man and in experimental animals with the protective effect as shown in field trials. In particular, the reproducibility and significance of the following tests should be measured :

(1) NIH mouse protection test measuring neutralizing antibody;

(2) tests of active immunity induced in mice;

(3) test of anti-haemagglutinin production in mice;

(4) test of the antibody combining power of a strain of virus.

There is at present no satisfactory toxicity test for influenza vaccines. Further research is needed on the relationship between pyrogenic and other toxic effect in experimental animals and in man.

[3] *Wld Hlth Org. techn. Rep. Ser.* 1953, **64**, 4

WHO Monograph on Maternal Care Published in Swedish

Dr. J. Bowlby's monograph *Maternal care and mental health* (*World Health Organization: Monograph Series* No. 2) has recently been translated into Swedish and has been published under the title *Modern och barnets själsliga hälsa* by Natur och Kultur, Stockholm.

MEDICAL EDUCATION IN SOUTH-EAST ASIA

The severe shortage of physicians throughout South-East Asia is one of the greatest obstacles to the countries' health programmes. Measures such as importing doctors, redistributing those available, or training more lower grade medical personnel are only palliative; the ultimate solution can be given only by the medical schools.

In the past three years, WHO has sent a considerable number of highly qualified teachers of medical subjects to various countries of South-East Asia, either on a consultant basis or as members of teams whose mission was to exchange information with professional counterparts in the countries visited. From the reports of these teachers and from other documentation, the Organization has been able to draw up a study of medical education in the Region, to survey the needs and to suggest means for meeting some of the more fundamental of them.

Medical manpower and medical schools

The number of medical schools in South-East Asia must be increased, or the capacity of the existing ones must be augmented. Thus far, more attention has been paid to creating new schools (e.g., in Burma, Ceylon, India, Indonesia, and Thailand) than to increasing the capacity of existing ones. The crux of either solution is the provision of teaching staff.

Of all the resources that are needed to develop modern health services in general, and medical education in particular, academic teaching staffs are among the most difficult to provide. Most of the other essentials of a medical school—buildings, instruments, books, teaching aids, etc.—can be more easily supplied, and fairly quickly if need be, because they are merely dependent upon funds, which can be made available from some source or another. Teachers, however, cannot be produced in a hurry : it takes approximately fifteen to twenty years to train a senior teacher of the required standing, and time is not the only factor in developing him into the leader he should be in his field. Governments should therefore realize that the establishment of new schools five, ten, or fifteen years hence is dependent upon training teachers now.

The problem of providing teaching staff for medical schools is, in large part, an economic one. The financial inducements of government posts or private practice far exceed those offered by teaching, so that the graduating physician is not often interested in continuing his training in order to become a professor in a medical school. The most crucial shortage is in teachers of the basic medical sciences. Here again, the financial discrepancy is apparent : teaching preclinical subjects has even less attraction than teaching clinical ones since private practice may supplement the income of the clinical professor.

The need for medical manpower in all the countries of South-East Asia is so great that the establishment of national planning bodies —medical manpower commissions—would be warranted. Such commissions, functioning under highest government authority, might be able to correct some of the prevalent unsatisfactory distribution of new graduates of medical schools.

The role of the medical school

There are three traditional or classic functions of a medical school : undergraduate training, service to the community, and research. These functions may, and should, however, differ according to the special needs

of a country or a region. For example, in less-developed countries physicians are called upon to assume civic responsibilities and should be trained for this; they are also required to have a better public-health background than the average practitioner in more-developed countries, since specialists in this domain are extremely rare.

The medical schools of South-East Asia are more or less fulfilling the first two of the above functions. It is in research that they are weakest, and it is for this reason that many of the schools have a more vocational than scientific or academic character. Failure to assume responsibility for research stems, in many countries, from the historical evolution of the medical schools. When the countries were under colonial rule, the mother country largely relied on her own research resources and provided her own personnel for such research institutions as were established in the colonies; now, the new independent countries have to rely increasingly on their own national scientific resources. The medical schools in such countries will gradually have to rise to the higher level of teaching and service for which research is a prerequisite, but this will require a great deal of time, planning, and effort.

Related to the problem of carrying out research is that of developing interest in the basic medical sciences. Generally speaking, it is easier to improve the situation with regard to the clinical than the pre-clinical sciences. There is a great need in most of the countries of South-East Asia to stimulate interest in, and appreciation of, the basic sciences so as to create a desire to experiment and investigate. Experimental and investigative work calls for a certain mental attitude, or intellectual " climate ", and it is this that must be developed if medical education is to have a solid foundation.

Another function of the medical school is to train its own future teaching staff. Teaching staffs eventually have to become self-perpetuating, in the sense that successors to the incumbents are trained by the school in the normal course of its routine functions. It may be said that a school has reached its full maturity only if, and when, it is capable of developing its own teachers, though this in no way implies that such training may not be advantageously supplemented by study in other schools or countries. Very few, if any, of the medical schools of the South-East Asia Region have reached this stage yet, and for many years to come they will have to rely more or less on foreign training facilities. However, the better and more scientific the training in their own schools becomes, the more will the graduates benefit from study abroad.

Orientation of the medical school

Medical education has to be oriented in each country to the specific needs and conditions of that country in order to produce a type of physician suited for the tasks at hand. The trend in modern medical education towards reorientation of teaching from the predominantly individual and curative approach to a more community-minded and preventive one becomes imperative in the less-developed countries, where environmental conditions and educational standards are so poor that individual curative care has little chance of improving the overall health situation. The general practitioner in the less-developed countries often has to assume many of the responsibilities of the public-health officer as well as carry on his clinical, curative practice.

At present, most of the medical schools in South-East Asia follow a certain foreign pattern of education, often an antiquated version of it. It will take much study, time, and courage to make the changes necessary to adapt the system to the specific needs of their own countries, but this reorientation is essential. Guidance and assistance from

outside agencies, such as WHO, can be most valuable; but such aid must be directed towards long-term objectives, and immediate efforts must be fitted into plans for the eventual reorientation of the medical education system.

Curriculum

In a region such as South-East Asia, where the need for physicians is so great, it is necessary to devise a curriculum which allows the educational goal to be satisfactorily reached in the shortest possible time. For instance, a seven-year curriculum is too long for a country with a physician : population ratio of 1 : 60,000. The length of the medical curriculum should be the outcome of an acceptable compromise between a country's medical manpower needs and the time required to teach successfully all that is deemed essential.

In teaching the basic medical sciences, the almost universal trend is to give more attention to the functional understanding of health and disease, placing increasing emphasis on physiology, biochemistry, and experimental pharmacology rather than on anatomy. Schools in South-East Asia still tend, however, to adhere to the morphological approach, and teaching in biochemistry and experimental pharmacology is inadequate in most places. Some revision of the curriculum will be required as certain specialities develop in the Region : for example, the science of biochemistry is still in its infancy in many schools; but it will gradually assert itself as a discipline separate from physiology, as it has in most of the advanced countries.

The entire curriculum of the medical schools of South-East Asia, particularly as regards clinical subjects, should be slanted towards the practical. The ideal means of achieving this emphasis on the practical would be small-group, bed-side teaching, but shortages of staff are an obstacle to such teaching at present. More effort should, in any case, be made to bring the student into touch with patients as early and as much as proves feasible.

The curriculum must also be slanted towards the preventive aspects of medicine, though this may be difficult to accomplish since it requires that the professors become more " prevention-minded ". Creation of a Chair in Preventive Medicine may, in South-East Asia as elsewhere, be the best means of giving this subject the needed emphasis in the curriculum. Training in public health becomes essential in the Region, as has been previously implied : health conditions demand that curative medicine go hand in hand with preventive and public-health measures. This means, in effect, that the undergraduate curriculum of medical schools in South-East Asia must include material which is often reserved for post-graduate public-health training in many of the more-advanced countries.

The bases of the general practitioner's clinical training are the four specialities of internal medicine, surgery, obstetrics and gynaecology, and paediatrics. Of these four, only paediatrics is still struggling in South-East Asia to gain the proper recognition and be taught as adequately as the other three subjects; this shortcoming should be corrected wherever it exists. The details of the curriculum in all of the four subjects should be determined by the particular health problems of the Region. For example, in internal medicine greater emphasis would necessarily be placed on the teaching of infectious and communicable diseases, parasitic infestations, and nutritional deficiencies than would be the case in countries where many of the conditions prevalent in South-East Asia would be clinical rarities.

Teaching

Teaching methods in the medical schools of South-East Asia must, like the curriculum,

be adapted to the particular needs of the setting in which they are employed. One of the questions to be considered—a question not unique to schools in this Region—is the system of examinations, which unduly dominates both the teachers' and the students' efforts. The professors seem to teach so as to prepare their students for their examinations, and the students are apt to concentrate on learning what they are likely to be asked. Thus the passing of examinations tends to be mistaken for the real objective, which is the acquisition by the student of all the knowledge and skill needed for adequately practising his future profession. The high examination "mortality-rate" in many of the schools of the Region indicates that both the teaching and the present system of examinations should be subjected to some revision.

Not enough deliberate effort is made to teach the students critical scientific reasoning and to encourage independent thought. The student should learn to apply general principles to particular cases rather than try to memorize all the particular cases he may encounter. For instance, the functional (pathological-physiological) mechanism of disease should be taught instead of disease entities as such. The student will thereby learn how to deal intelligently with any situation with which he may be confronted.

The solution of these problems rests almost entirely with the medical educational institutions concerned, especially with the teaching staffs. Mental reorientation is required, and this will probably be attained only gradually and by consistent and determined effort.

General conclusions

The WHO study suggests that the attention of governments be drawn to the desirability of creating an authoritative national body in each country to prepare a reform of medical education. As has been pointed out, the most urgent task is to increase the number of qualified teachers, particularly in the basic sciences. Also necessary is an increase in the budgets and resources of medical schools. While assistance from WHO and other outside agencies may provide impetus and inspiration in meeting many of these needs, improvement of medical education in South-East Asia depends, in the final analysis, on the effective action of the governments themselves.

Although based on the situation in South-East Asia, the findings of this study could be applicable to countries of other regions as well, and, on many points, to medical education everywhere. For this reason, the study is of general interest to those concerned with what is an urgent problem in most parts of the world—how to train enough doctors so that at least minimum medical care may be provided for all of the population.

Statistical Reports

Two numbers of the *Epidemiological and Vital Statistics Report* have recently been issued. The first [1] contains data on cases of, and deaths from, smallpox, scarlet fever, and erysipelas, and statistics on deaths from scarlet fever since the beginning of the century. The second [2] is devoted to general vital statistics (natality, general mortality, and natural increase) in selected countries from the beginning of the century, and to tables on cases of, and deaths from, yellow fever, relapsing fever, poliomyelitis, and influenza.

[1] *Epidem. vital Statist. Rep.* 1954, 7, 281
[2] *Epidem. vital Statist. Rep.* 1954, 7, 305

NURSING EDUCATION IN TAIWAN *

Taiwan is an island located between the Philippines on the south and Japan on the northeast, with the China Sea on the west and the Pacific Ocean on the east. Taiwan means " terraced bay ", which is descriptive of the beautifully terraced fields of rice and tea. The island is often referred to as Formosa, which means beautiful and is a name given to the island by Portuguese sailors in 1544.

The Chinese migration to Taiwan began in 1388. The Dutch came in 1624. The Spanish landed in 1626 and occupied the northern section for a short time; they were driven out by the Dutch 15 years later. The island was recovered by the Chinese in 1661. Following the Sino-Japanese War, Taiwan was ceded to Japan in 1895. The Japanese established industries, built railroads, laid telephone and telegraph lines, improved harbours, developed agriculture, and established schools. Taiwan was returned to China in 1945, and became a province of the Chinese Republic.

Nursing in Taiwan was, for many years, an unskilled type of service. Nurses usually did the work of maids and clerks. Patients in hospitals were given nursing care by members of the family. Nurses and midwives received an apprenticeship form of training that did not include instruction or supervision by nurses. The only two professionally educated nurses in Taiwan were two young women who had attended St. Luke's School of Nursing in Tokyo.

There are now four schools of nursing in Taiwan : the National Defence Medical College School of Nursing, the dean of which is a member of the WHO Nursing Panel; the Provincial School of Nursing and Midwifery, which gives a four-year course that includes public-health nursing and midwifery; a new school in Tainan, in the southern part of the island ; and the School of Nursing at the National Taiwan University Hospital, which was opened in May 1950. At this last school, 43 students completed the three-year training course in May 1953; 50 students are enrolled annually, and the present enrolment is 147.

Since Taiwan has only recently developed schools of nursing under the direction of nurses, one of the major problems is the shortage of nurse-teachers. The Government requested assistance from WHO in providing teachers for the National Taiwan University Hospital School of Nursing over a five-year period.

The first of a team of five nurse-educators assigned by WHO arrived in Taiwan in May 1952. A year later the team was complete, with one teacher in general nursing, one in obstetrics and paediatric nursing, one in nursing arts, and two in medical and surgical nursing. Well-qualified local counterparts were assigned to work with the international team members. Together they formed a nursing education committee that has been the focus of group planning.

This committee tackled the problem of the acute shortage of teaching materials for Chinese student nurses. Nursing textbooks that have been translated into Chinese are mostly out of date. The Chinese Nurses' Association, with the help of the American Board for Medical Aid to China, is working on translations of current articles in nursing journals ; but there is very little material to meet the individual needs of student nurses. The nursing education committee undertook the preparation of student manuals in subjects in which they were most needed— nursing arts, obstetrics, paediatrics, and

* This article was written by Miss Elizabeth Hill, Nursing Adviser, WHO Regional Office for the Western Pacific.

medical and surgical nursing. The preparation of these manuals evolved out of discussions between the WHO nurses, their local counterparts, and the medical teaching staff. Lectures were written in English by the WHO nurses and translated into Chinese by their local counterparts. The Chinese lectures were then mimeographed and given to each student. The principles and procedures set forth in the manuals are part of the students' actual experience. This material has been revised as it has been used for two years. Each study unit includes references to books that are in the school library. At the present time, three manuals are ready for the Chinese editor and the artist, who will illustrate the contents with line drawings. The manuals will be in loose-leaf form so that they can be easily revised. If the budget permits, one copy of each manual will be given to each student in the four schools of nursing. It has been requested that the manuals be made available for purchase by graduate nurses, and it is anticipated that this can be arranged. A five-year supply will be printed. As experience is gained in the preparation of teaching material in Taiwan, the nursing education committee expects to enlarge the students' library by producing manuals on other subjects. Textbooks from other countries are necessary for reference, but the main body of the material that is most useful for student teaching must be written in the country where it is used.

One of the objectives of the WHO-assisted nursing education project is to prepare local nurses for teaching and administration. This is being accomplished through the participation of local personnel, with WHO nurses, in the teaching programme and through fellowship study abroad. Three nurses are on study-leave at present—one in nursing arts, one in obstetrics, and one in surgical nursing. Three nurses have returned from study-leave—one in nursing administration, another in nursing arts, and a third in public-health nursing. Four nurses are going on study-leave this year, and others are scheduled to go next year. Nurses have been selected for fellowships in order to strengthen both nursing service and nursing education. Some of the fellowships have been granted by the Foreign Operations Administration (FOA) of the USA, and others by WHO.

A special committee on nursing education was set up in 1953 to study the needs and make recommendations on the levels of nursing education that are needed in Taiwan. Among other suggestions was one that a collegiate school of nursing should be established to meet the need for nursing teachers, supervisors, and administrators. It was decided that this collegiate school of nursing should be set up at the National Taiwan University. In preparation for this development, the Director of the School of Nursing of the University was sent for study at Boston University, in the USA. WHO is recruiting a nurse-educator who has had experience at the university level, and FOA is assisting in the remodelling of buildings and by supplying equipment. The interest in this project shown by the University, the faculties of the nursing and medical schools, and Government officials augurs well for its future.

When plans for WHO assistance were drawn up in 1951, it was intended that the international team should be available for aid in improving nursing education and nursing services throughout Taiwan, although it would be assigned primarily to the National Taiwan University Hospital School of Nursing. Accordingly, one member of the team has been helping with the new school of nursing at Tainan, giving refresher courses for staff nurses and assistant nurses. This assistance is expected to be continued, with the WHO nurse serving with her local counterpart in the capacity of Educational Director. Local nurses have been granted fellowships by FOA so that they may obtain

additional preparation for teaching positions in this school. To help to improve nursing services, team members have given courses for directors of nursing services in some of the provincial hospitals. The Government is requesting WHO aid in planning refresher and postgraduate courses.

The WHO project will be completed when the collegiate school of nursing and postgraduate courses are functioning under the direction of a local faculty, and when Taiwan has facilities for the preparation of nurse-teachers, supervisors, and educators.

USA NATIONAL CITIZENS COMMITTEE FOR WHO

National committees for WHO, the aim of which is to promote interest in the Organization and to obtain support for its activities, have been established in Austria, Canada, Finland, Japan, and the USA, and are in the process of being formed in France and the United Kingdom of Great Britain and Northern Ireland. The following article concerns one of these committees, that in the USA, which is holding its second annual meeting this month.

" Doctors and other public-health workers know that health is not something you can hand over to people, like food or money. Health—personal, national or international —must be worked for, ... Therefore, it stands to reason that health, above all other subjects, needs the understanding and support of the peoples of every country." This statement, by Dr. Frank G. Boudreau, who has been one of the leading figures in the establishment in the USA of the National Citizens Committee For The World Health Organization, expresses one of the main reasons for setting up such committees—namely, to aid understanding of the work of WHO and thereby to encourage public support of its activities.

The creation of national WHO committees was discussed and given official sanction by the Third World Health Assembly, in 1950. Even previous to that time a committee had been formed in Finland, but this particular national group was Government-appointed and acted in a co-ordinating capacity between the country and WHO and other international organizations dealing with health problems. The type of committee envisaged by the Assembly was of a non-governmental nature, though it was recognized that the pattern and functions of such committees would vary from one country to another.

The idea for the National Citizens Committee for WHO in the USA had its inception during the summer of 1950 when various public-health leaders began to discuss the idea of a citizen group to make the work of WHO more familiar to the American people. The next step was consideration of the idea by the National Health Council, whose membership includes most of the national and voluntary health agencies in the USA. The Council, in January 1951, set up a steering committee to study the formation of a national committee for WHO. Almost immediately, the American Association For The United Nations, which has encouraged the formation of groups in support of the specialized agencies, joined with the National Health Council as a co-sponsor of the Committee. Growth and recognition came rapidly, and in May 1953 the Committee was incorporated as a separate entity with its own officers, board of directors, membership structure, and budget.

The National Citizens Committee for WHO is a voluntary, i.e., non-governmental, citi-

zens' organization which is supported by individual membership (in six classifications —active, contributing, sustaining, supporting, patron, sponsor—by amount of annual dues paid, ranging from $5.00 to $1,000.00) and by organization membership (sponsoring organizations, participating organizations, associated groups, and affiliated local committees—which vary with the programme and nature of the member organizations and the amount of the annual contributions made to the National Citizens Committee). Its prospectus reads, in part:

" The purpose of the National Citizens Committee For The World Health Organization is to increase public understanding of the relation of public health to the general welfare in all parts of the world community, and public appreciation of the importance of international health programs. It will seek to enlist interest in, and support for, the work of the World Health Organization.

" Recognizing that most people think of international relations in terms of political and military balance, and of the United Nations as an organization for debating such matters, another basic objective of the Committee is to call attention to a part of the United Nations in which co-operative effort in the solution of international problems is proceeding with marked success—the World Health Organization. International health work is a field in which there need be no destructive competition and strife. The supply of health is unlimited. If our neighbor gains in health, we gain also.

" It is obvious that the U.N. will fail in creating peace unless the millions who live in misery in underdeveloped countries can look forward to rising standards of living, which can only be achieved by comprehensive economic growth. Public health, an area in which men of all races, creeds and nationalities can learn easily to work together, is the ideal spearhead of a movement for international co-operation in economic development . . . "

What, exactly, does the Committee do ? When it was still in the " steering-committee stage ", it sponsored, jointly at the 79th Annual Meeting of the American Public Health Association, in San Francisco in October 1951, a session of the latter on the subject of international health. This meeting was addressed by Dr. Brock Chisholm, the then Director-General of the World Health Organization, Dr. F. Soper, Regional Director for the Americas, Dr. C. Mani, Regional Director for South-East Asia, Dr. H. Hyde, Member of the WHO Executive Board, designated by the USA, and Dr. F. G. Boudreau, Chairman of the Steering Committee, National Citizens Committee for WHO. It was at this gathering that Dr. Boudreau announced the formal establishment of the Committee.[1] Starting with a $10,000 grant from the Milbank Memorial Fund, the steering committee gradually created a truly national group, with local chapters in various parts of the country. A particularly active sub-group is the Bay Area Citizens Committee for WHO, in San Francisco, California.

A campaign of public education on world health was undertaken in February 1953. One of the first projects was the organization of the first National Conference on World Health, which was held in Washington, D.C., 6, 7, and 8 April of the same year, with World Health Day—7 April—being the occasion for a suitable celebration. Working groups met during this conference to discuss the Committee; and the incorporation of the Committee as an independent agency was one of their major recommendations. Federal income tax exemption for members and contributors was secured in September 1953.

The first annual meeting of the Committee was held 9 November 1953, in New York City. As part of this meeting, there was a forum session on the subject " World Health and the American People ", in which questions such as " Should the United States ' go it alone ' without the World Health Organization ? " and " What ' ceiling ' should there be on United States appropriations to the WHO budget ? " were considered by speakers familiar with, and to,

[1] *Amer. J. publ. Hlth*, 1951, 41, 1477

the Organization—Dr. S. Z. Levine and Dr. C.-E. A. Winslow, both of whom have been WHO consultants; Dr. A. Wolman, who served on the USA Delegation to the First World Health Assembly and as Chairman of the second session of the WHO Expert Committee on Environmental Sanitation; Dr. H. Hyde, Member of the WHO Executive Board; and Dr. F. W. Reynolds, former Medical Officer in the WHO headquarters section on venereal infections and treponematoses. At the business session, considerable progress in organizational activities was noted. A budget of $30,000 for 1954 was approved, and a more ambitious programme and budget for the future were proposed.

The second annual meeting of the Committee is taking place 11 October 1954, in Buffalo, N.Y. Dr. M. G. Candau, Director-General of the World Health Organization, is addressing this session.

The National Citizens Committee for WHO is a growing concern, and has begun to fulfil its purpose of providing opportunities for Americans " to become better informed about the significance of world health, the importance of international public-health programmes, and the responsibilities and work of the World Health Organization ".

Reports of Expert Groups

VACCINATION AGAINST TUBERCULOSIS

There is now convincing evidence that a specific resistance to tuberculosis can be induced by vaccination. Many problems concerning this vaccination have still to be solved, however, A recent WHO technical report [1] provides up-to-date information concerning such problems and points out the subjects on which further study is required. This report, the result of discussions of the WHO Expert Committee on Tuberculosis, deals particularly with BCG vaccination, though brief consideration is given to two other types—with vole bacillus and with killed tubercle bacilli—that are still in the experimental stage.

BCG vaccines

Experience with BCG vaccines produced in different laboratories has shown that there is appreciable variation in the allergy-producing qualities of vaccines and in the degree of regional glandular reactions which they provoke, particularly when the results obtained by oral vaccination with the strain of BCG used in a number of Latin American laboratories are compared with those obtained with strains used in some other laboratories. It is suggested in the report that additional study is necessary to determine whether strains of BCG actually differ biologically, or whether the differences in results are attributable to variations in methods of production and administration of the vaccine, or to characteristics of the vaccinated populations.

Another important problem is the keeping qualities of BCG vaccines. The freeze-drying process seems to offer promise for the production of vaccines of good keeping qualities, but further investigation is required before more general use of freeze-dried vaccines can be recommended. Liquid vaccine appears to maintain its allergy-producing power for a

[1] *Vaccination against tuberculosis; sixth report of the Expert Committee on Tuberculosis* (*World Health Organization : Technical Report Series* No. 88). 10 pages. Price : 1/9, $0.25, or Sw. fr. 1.— Published in English and in French.

considerably longer time than was believed, especially if it is adequately protected from light, even during manufacture, and kept at a low temperature. In this connexion, too, further laboratory study is needed, and the results of experimental work need to be correlated with the effects of vaccination in man. The final appreciation of the value of a vaccine should be based on its ability to produce increased resistance—not just allergy —in laboratory animals as well as in man.

Techniques of administration

Techniques of administration of BCG vaccine are an interesting point of discussion in the report. Consideration is given to oral BCG vaccination, a technique widely used in certain countries of South America. It seems that this form of vaccination can be carried out without inconvenience even in tuberculin reactors. There is evidence, however, that not every vaccine is suitable for this purpose, and it would be premature to recommend that this method of vaccination be generally adopted. In view of the apparent practical advantages of oral vaccination by large doses, it is recommended that comparative studies in animals between this and other methods of vaccination be undertaken, although such studies would be most difficult and expensive. It is suggested in the report that this work might be undertaken by the WHO Tuberculosis Research Office, adequate financial support being given to the Office for this purpose. Until such studies have been made, parenteral methods should be preferred for general use. Intradermal vaccination is satisfactory for mass vaccination campaigns.

Complications

A certain percentage of complications may be expected with any vaccine and any method of administration. The aim should be to use a vaccine which gives the smallest number of complications and yet produces a satisfactory allergy. It is emphasized in the report that small abscesses at the site of vaccination, healing within two months, or non-suppurative regional adenitis of moderate degree should not be considered as complications.

Selection of individuals for vaccination

What dosage of tuberculin should be used in surveys to determine who should be vaccinated? The report states that studies on this question support the view that the use of a single Mantoux test of 5 tuberculin units (TU) is satisfactory and practical for selecting individuals for vaccination. This test should therefore continue to be used in mass vaccination programmes, and the arbitrary definition of tuberculin reactor should continue to be based on the presence of an induration of 5 mm or more in diameter at the end of three days.

Certain principles are set forth with regard to the selection of groups to be vaccinated in mass BCG programmes. A preliminary survey of the area should be made to determine the levels of natural tuberculin sensitivity and the prevalence of tuberculosis; in some areas, it might also be important to study more general social and demographic aspects, such as stability or movement of population, industrial development, etc. Where there is a stable population and a low incidence of tuberculosis infection, the relative needs of different public-health programmes should be considered and priorities established before embarking upon a mass vaccination campaign. In areas with a high prevalence of tuberculosis, mass vaccination should cover all age-groups from one year to that in which 80% – 90% reactors to tuberculin are found. Although vaccination of the newborn would also be highly desirable in such areas, this group would best be dealt with outside the mass vaccination programme. In areas with a low and decreasing tuberculosis prevalence, where mass vaccination of the whole population is not carried out, the selection of age-groups for vaccination should be determined in accordance with the epidemiology (including age distribution) of the disease.

Tuberculin allergy

Post-vaccination testing should be carried out with the same test that is used for selecting subjects to be vaccinated, and the results should be expressed not merely in terms of percentage of reactors, but quantitatively, using a method of measurement such as that adopted by the WHO Tuberculosis Research Office—i.e., frequency distribution of the diameter of induration measured in millimetres.

Sample checks of those vaccinated in mass programmes should be carried out periodically to see whether satisfactorily high and constant levels of allergy are maintained. Such periodic testing could be achieved by the use of special assessment teams, similar to those now working for WHO in several areas.[2] Since sample checks might be affected by possible variations in batches of vaccine produced in a given laboratory, regular tests should be performed on each batch to assess the level of allergy conferred by the vaccine when properly handled and administered.

The report draws attention to the importance of the use of standardized preparations of tuberculin. Biological assay of newly prepared tuberculins against the International Standard presents great difficulties, and it is therefore recommended that a single large batch of PPD—enough to meet the requirements for a considerable number of years—of standard potency be prepared and be made internationally available for the purpose of Mantoux testing.

Revaccination

It is advisable that individuals and groups especially exposed to tuberculosis be tested two to three months after vaccination has been performed and that individuals found to be non-reactors at this time be vaccinated again. Periodic retesting should be carried out later, and all non-reactors should be revaccinated. In mass campaigns, retesting should be made of sample groups to decide whether or not the whole vaccinated population should be retested.

Protective value of BCG

Large-scale control trials are at present being made in the USA and in Great Britain to assess the degree of protection given by BCG vaccination in different sections of the population. Also of interest are efforts being made in Finland [3] and in Denmark to assess the protective value of BCG—in the former through a national vaccination roster, and in the latter through a tuberculosis index. Where conditions are favourable, countries should be encouraged to maintain central or regional vaccination rosters so that records may be kept of cases of tuberculosis occurring in vaccinated individuals.

Assessment of the protective power of BCG vaccination in man calls attention to the need for studies of tuberculosis morbidity and for international agreement on a definition of tuberculosis morbidity. The report stresses the importance of bacteriological evidence in the diagnosis of tuberculous disease.

BCG vaccination in the public-health programme

BCG vaccination should be only part of a tuberculosis-control programme, and should be integrated into the general public-health services of a country. Where a large-scale BCG-vaccination campaign is envisaged, its organization should be co-ordinated centrally or regionally and not be left to tuberculosis centres. The mass campaign should make use of all appropriate public-health facilities and institutions, while the tuberculosis centres should concentrate their efforts on the vaccination of particularly vulnerable individuals and groups.

[2] See *Chron. Wld Hlth Org.* 1954, **8**, 288.

[3] See *Chron. Wld Hlth Org.* 1954, **8**, 241.

Notes and News

Rabies Vaccines

One of the tasks of WHO in its work on rabies is to assist governments in the production and potency-testing of vaccines used for human and veterinary purposes. In this connexion, the Organization has provided expert consultants for rabies-control assistance in many countries during the past few years. In 1952, a training course in laboratory techniques in rabies was held at the Pasteur Institute in Coonoor, India. This course was attended by 48 medical and veterinary officials, from 21 different countries, who received instruction in diagnosis, vaccine and serum production, and potency-testing. A monograph covering these topics has recently been published by WHO.[1]

The latest request for assistance along these lines has been from Portugal. In September, WHO sent to Portugal Dr. P. Atanasiu, of the Institut Pasteur, Paris, who is to work with medical and veterinary technicians in that country on vaccine production and potency-testing for approximately one month. Dr. Atanasiu is a well-known virologist, who, with Dr. P. Lépine, Chief of the Virus Section of the Institut Pasteur, has collaborated with the Organization in important research on rabies.

Control of Brucellosis in Sheep and Goats

The control of infection in sheep and goats is one of the most difficult problems in brucellosis. Infection in these animals is caused by *Brucella melitensis*, the most pathogenic for man of the three types of *Brucella* organisms (the other types are *Brucella abortus*, usually infecting cattle, and *Brucella suis*, usually infecting swine). *Brucella melitensis* infection (classically known as " Malta Fever ") affects large numbers of human beings yearly in the Mediterranean countries and in Latin America, where the infection of sheep and goats is very common. While this infection in man can be caused by the ingestion of milk and milk products from infected sheep and goats, it has recently been determined that the common means of transmission is by the air-borne route. This indicates that ultimate protection of man will depend on the elimination of infected animals or on the prevention of their shedding of the organism, rather than on the adequate heat treatment of milk and milk products. *Brucella* infection in sheep and goats has not been studied carefully since the excellent investigations carried out by the Malta Fever Commission of Great Britain early in this century.

FAO, with WHO technical collaboration, undertook early in 1953 to make a systematic study of *melitensis* infection in sheep and goats. This work is being carried out in Tunis under the direction of Dr. G. Renoux, a member of the FAO/WHO Expert Advisory Panel on Brucellosis, who is being assisted by two FAO veterinarians assigned to this project. The centre of the operations is the brucellosis laboratory in Tunis, located in the Pasteur Institute there.

The study includes the provision of hundreds of uninfected sheep and goats procured in Sweden by FAO and transported to Tunis for experimental purposes. The subjects to be covered, according to a plan worked out by various members of the FAO/WHO Expert Advisory Panel on Brucellosis, include the natural pathogenesis of the disease in these animals, diagnostic procedures, field transmission, and finally, various vaccines. Until now, no brucellosis vaccines have been effective in sheep and goats, but several have

[1] World Health Organization (1954) *Laboratory techniques in rabies*, Geneva (*World Health Organization : Monograph Series* No. 23)

shown promising results in small laboratory experimental animals. After further experiments in such animals, the various vaccines will be administered to sheep and goats and will be challenged with virulent organisms to determine whether protection has been conferred. These studies will not be completed until towards the end of 1955, and further investigations are envisaged for 1956.

The Government of Tunis is assisting liberally, both financially and from the point of view of resources, in these highly important experiments.

International Standards of Water Quality

Requests have come to WHO from two directions regarding the preparation of internationally acceptable standards of drinking water quality. The first arose in connexion with the joint effort of WHO and the International Civil Aviation Organization (ICAO) on the sanitation and hygiene of airports. The second came as a result of discussions at the Congress of the International Water Supply Association. At the beginning of 1953, WHO canvassed its Member States to determine whether official standards of water quality were already in use, and, if so, what these standards were. At the same time, information was sought regarding experience with water-borne diseases so as to lay a basis for water quality as related to disease transmission.

It was found that there are two generally accepted standards of water quality. In the Western hemisphere, the statement on water quality prepared by the US Public Health Service [2] for use on interstate carriers is generally accepted and, in the majority of cases, has been officially adopted as the legal standard for the quality of public water-supplies. Throughout the British Commonwealth the standards are those established by the British Ministry of Health.[3] Other standards exist but are not widely used outside the country of origin.

It is of interest that information regarding the incidence of enteric disease is lacking in most of the 71 replies received to the WHO questionnaire, apparently because incomplete statistical records are kept. All of the replies stressed the importance of water-supply sanitation, even in those areas for which little information concerning procedures, policies, and standards is recorded.

Standard methods for the examination of water are as lacking in uniformity as are standards of quality. In the 17 countries where the British practice is followed, British standard methods are used; and, in the 19 countries where standards of the US Public Health Service are accepted, the methods of the American Public Health Association [4] are employed. There seems to be almost no laboratory control of water supplies. Only a very few countries recorded the existence of government laboratories concerned with the examination of water, and the data received do not indicate any definite supervision over laboratories to ensure uniformity of practice and adherence to acceptable methods.

From the replies to the questionnaire and from interest already expressed, it is apparent that there exists a major concern in the development of international standards of water quality and the concurrent problem, which cannot be separated from the first, namely, the development of standard methods for the examination of water.

The reports received from Member States on this question have been compiled and analysed by WHO and distributed to the regional offices for use in convening regional discussions on this subject.

Standardization of Anti-Snake-Venom Sera

Before the Second World War, the Health Organisation of the League of Nations undertook some preliminary studies towards a programme for the standardization of anti-snake-venom sera and other antivenenes.

[2] *Publ. Hlth Rep. (Wash.)* 1946, **61**, 371-384. Reprint No. 2697, "US Public Health Service Drinking Water Standards—1946"

[3] British Ministry of Health (1939) *Bacteriological examination of water supplies*, London. Report No. 71.

[4] American Public Health Association (1954) *Standard methods for the examination of water, sewage, and industrial wastes*, New York, 10th ed. In press.

Details will be found in a paper by Gautier in the *Bulletin of the Health Organisation, League of Nations*.[5] The World Health Organization is now exploring possibilities of undertaking a similar programme in this field of biological standardization. In association with Professor E. Grasset, Director of the Institute of Hygiene, University of Geneva, whose contributions to the study of antivenenes over a period of some twenty years in South Africa are well known, the Organization is attempting to clear the ground for the further studies that will be necessary by obtaining information about present methods in production centres, both commercial and non-commercial, throughout the world. A questionnaire has accordingly been sent to a number of these centres. Those that have not yet received the questionnaire, and that are willing to participate in this enquiry, are requested to communicate with the Director of the Division of Therapeutic Substances, World Health Organization, Geneva, who will send the questionnaire to them. The co-operation of all antivenene-production centres will be greatly appreciated.

[5] *Bull. Hlth Org. L. o. N.* 1945/46, **12**, 1

Review of WHO Publications

Annual Epidemiological and Vital Statistics, 1951, Geneva, 1954. 506 pages. Price: £2 10*s*., $7.50, or Sw. fr. 30.—. Bilingual edition (English and French).

Here, in a single volume, are more than 500 pages of statistics covering population movements; causes of death; and cases of, and deaths from, communicable diseases in most countries of the world.

This important work provides, in a series of 68 different statistical tables, the only documentation of its kind on demographic and health conditions in various countries and territories. As in previous volumes, tables are included on detailed statistics concerning tuberculosis and cancer. In addition, this volume gives for the first time some series of specific mortality-rates, according to sex and age, for 16 important causes of death; mortality-rates by sex are given for 28 other causes of death. The data thus presented lend themselves to quick and interesting analysis. An item likely to be of particular interest to health administrations is a new and up-to-date list of compulsorily notifiable communicable diseases in each country or territory. The work is completed by a detailed alphabetical index by means of which the reader will be able to find easily subjects on which data are available for each country or territory.

Proceedings and Reports Relating to International Quarantine: Annual Report of the Director-General on the International Sanitary Regulations; First Report of the Committee on International Quarantine; Relevant Proceedings of the Seventh World Health Assembly (*Official Records of the World Organization* No. 56; supplement to *Official Records* No. 55 : *Seventh World Health Assembly*) Geneva, 1954. vi+121 pages, Price: 6/9, $1.00, or Sw. fr. 4.—. Published in English and in French.

A detailed review of the quarantine problems associated with the early months of application of the International Sanitary Regulations is provided in this number of the *Official Records*. It carries one step further

the story of the Regulations which has been traced in previous numbers.[1]

The first part contains the first annual report of the Director-General on the working of the Regulations—a worldwide review of their application for the period 1 October 1952 to 30 June 1953 as seen from the Organization.[2] Added to this are reports from States parties to the Regulations on the difficulties encountered by their health administrations in applying the Regulations and descriptions of some of the methods used to overcome these difficulties. A final section of Part I gives proposals by Member States and suggestions by the Director-General for improving the text of the Regulations.

Part II of the volume consists of the report of the WHO Committee on International Quarantine, which met in October 1953 to review the application of the Regulations and to consider the Director-General's report and the proposals for improvement; the recommendations to the Seventh World Health Assembly concerning the Regulations; and the second report of the Expert Committee on Yellow Fever.

A third part is devoted to relevant proceedings of the Seventh World Health Assembly. These comprise the report of a working party set up by the Health Assembly to consider the report of the Committee on International Quarantine and its recommendations; a verbatim record of the discussion, in plenary session, concerning the Regulations; and the resolutions relative to the Regulations that were adopted by the Health Assembly, including an important resolution on the delineation of yellow-fever endemic zones.

This publication should be useful to health administrations and local authorities in that it may help them to understand more fully the difficulties encountered by other countries in pursuing the common aim—the international control of disease.

[1] See *Off. Rec. Wld Hlth Org.* Nos. 37, 42, and 48.

[2] See *Chron. Wld Hlth Org.* 1954, **8**, 269.

International Non-Proprietary Names

In accordance with paragraph 3 of the Procedure for the Selection of Recommended International Non-Proprietary Names for Drugs Moving in International Commerce,[1] notice is hereby given that the following names are under consideration by the World Health Organization as proposed international non-proprietary names :

Proposed International Non-Proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
diethylthiambutenum	
diethylthiambutene	3-diethylamino-1, 1-di(2-thienyl)but-1-ene
diéthylthiambutène	diéthylamino-3 di(2-thiényl)-1, 1 butène-1
dimethylthiambutenum	
dimethylthiambutene	3-dimethylamino-1, 1-di(2-thienyl)but-1-ene
diméthylthiambutène	diméthylamino-3 di(2-thiényl)-1, 1 butène-1
ethylmethylthiambutenum	
ethylmethylthiambutene	3-ethylmethylamino-1, 1-di(2-thienyl)but-1-ene
éthylméthylthiambutène	éthylméthylamino-3 di(2-thiényl)-1, 1 butène-1

Comments on, or formal objections to, the above names may be filed within a period of six months from 1 November 1954, and should be forwarded to : The Director-General, World Health Organization, Palais des Nations, Geneva, Switzerland.

[1] See *Chron. Wld Hlth Org.* 1953, **7**, 297.

CORRIGENDUM

1954, Vol. 8, No. 6 (June), p. 211, Table I, line 17 (New Zealand)

	1901-05	*1921-25*	*1952*
Delete	75	—	84
Insert	75	43	22

(Note : The figure of 84 for 1952, as given previously, refers to the Maori population.)

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